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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,781	03/15/2004	Kiyoshi Tatsuhara	2004-0334A	8634
513	7590	04/14/2006	EXAMINER	
WENDEROTH, LIND & PONACK, L.L.P.			HOPKINS, ROBERT A	
2033 K STREET N. W.			ART UNIT	
SUITE 800			PAPER NUMBER	
WASHINGTON, DC 20006-1021			1724	

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/799,781	<b>Applicant(s)</b> TATSUHARA ET AL.	
	<b>Examiner</b> Robert A. Hopkins	<b>Art Unit</b> 1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3-15-04, 6-15-04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 14 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 14 recites a process step, however the claim depends on claim 11 which is an apparatus claim. Therefore, claim 14 fails to further limit claim 11 because claim 14 fails to provide further structural limitations which further limit the apparatus of claim 11.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3,5,6,9,10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shvarev et al(6391185).

Shvarev et al teaches a method of regenerating an adsorbent comprising applying a voltage between a first electrode made from the adsorbent in which a substance is adsorbed(17 in figure 4) and a second electrode(18), to elute the substance from the first electrode in an ionic state, in an electrolyte(20). Shvarev et al further teaches wherein the substance is one of a heavy metal and fluorine. Shvarev et

Art Unit: 1724

al further teaches wherein the substance is mercury and the first electrode is used as an anode. Shvarev et al further teaches wherein the substance is one of mercury and selenium, and the first electrode is used as a cathode. Shvarev et al further teaches wherein the electrolyte is one selected from the group consisting of sodium chloride, potassium chloride and sodium carbonate. Shvarev et al further teaches wherein the adsorbent is carbon material(composite adsorption regenerable carbon material) that has been used in an exhaust gas treatment apparatus. Shvarev et al further teaches wherein the carbon material is one of activated carbon and activated carbon fiber(column 3 lines 42-47).

Claims 11-14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shvarev et al(6391185).

Shvarev et al teaches an apparatus for regenerating an adsorbent comprising an electrolytic cell(19) filled with an electrolyte(20), an electrode unit that includes a first electrode made from the adsorbent in which a substance is adsorbed(17 in figure 4) and a second electrode(18), the first electrode and the second electrode being soaked in the electrolyte, and a power source(22) that supplies a voltage applied between the first electrode and the second electrode. Shvarev et al further teaches wherein the adsorbent is carbon material(composite adsorption regenerable carbon material) that has been used in an exhaust gas treatment apparatus. Shvarev et al further teaches wherein the carbon material is one of activated carbon and activated carbon fiber(column 3 lines 42-47).

Claims 1-6,9, and 10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Clifford et al(5904832).

Clifford et al teaches a method of regenerating an adsorbent comprising applying a voltage between a first electrode made from the adsorbent in which a substance is adsorbed(column 5 lines 22-25) and a second electrode, to elute the substance from the first electrode in an ionic state , in an electrolyte(column 7 lines 62-67; column 8 lines 1-14). Clifford et al further teaches wherein the substance is one of a heavy metal and fluorine. Clifford et al further teaches wherein the substance is mercury and the first electrode is used as an anode(column 5 lines 34-36). Clifford et al further teaches wherein the substance is one of mercury and selenium, and the first electrode is used as a cathode(column 5 lines 29-31). Clifford et al further teaches wherein the electrolyte is sulfuric acid(column 8 line 1). Clifford et al further teaches wherein the electrolyte is one selected from the group consisting of sodium chloride, potassium chloride and sodium carbonate(column 8 lines 10-12). Clifford et al further teaches wherein the adsorbent is carbon material(column 8 lines 23-34). Clifford et al further teaches wherein the carbon material is one of activated carbon and activated carbon fiber.

Claims 11-14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Clifford et al(5904832).

Clifford et al teaches an apparatus for regenerating an adsorbent comprising an electrolytic cell filled with an electrolyte(column 7 lines 62-67; column 8 lines 1-14), an electrode unit that includes a first electrode made from the adsorbent in which a

Art Unit: 1724

substance is adsorbed(column 5 lines 22-25) and a second electrode, the first electrode and the second electrode being soaked in the electrolyte, and a power source(not shown) that supplies a voltage applied between the first electrode and the second electrode. Clifford et al further teaches wherein the adsorbent is carbon material(column 8 lines 23-34) . Clifford et al further teaches wherein the carbon material is one of activated carbon and activated carbon

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Clifford et al(5904832) or Shvarev et al(6391185) taken together with Waite et al(2004/0020790).

Clifford et al and Shvarev et al teaches all of the limitations of claim 7 but is silent as to wherein the applying includes sweeping the voltage in a range from a positive voltage to a negative voltage. Waite et al teaches a method of regenerating an electrode of an electrolytic cell by applying a sweeping voltage across the electrodes within the cell. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a step of sweeping the voltage in a range from a positive voltage to a negative voltage to increase the active surface area of the adsorbent electrode of Clifford et al and Shvarev et al.

Art Unit: 1724

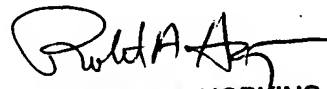
Clifford et al and Shvarev et al further teach wherein the substance is desorbed from the adsorbent while one of oxygen and hydrogen is generated by the applying.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Friday, 7am-4pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rah  
April 13, 2006

  
ROBERT A. HOPKINS  
PRIMARY EXAMINER  
A.4.1724